



Lurgi

01. October 2009

Lurgi's Hydrogen Generation Unit for Grupa LOTOS S.A. ready for start-up

press release

Contact

Lurgi GmbH
Corporate Communications
Klaus Kilian
Lurgiallee 5
D-60439 Frankfurt / Main
Phone : +49 (0) 69 58 08 - 42 54
Fax : +49 (0) 69 58 08 - 11 09

Lurgi in brief

Lurgi is a **leading technology company operating worldwide** in the fields of **process engineering and plant contracting**.

Based on syngas, hydrogen production and clean conversion technologies for fuels or chemicals Lurgi offers innovative solutions that allow the operation of **environmentally compatible plants** with clean and energy-efficient production processes.

Its technological leadership is based on **proprietary** and exclusively **licensed technologies** which aim to convert all carbon energy resources (oil, coal, natural gas, biomass ...) in clean products.

Lurgi is a subsidiary of the Air Liquide Group.

www.lurgi.com

Nr. 04 - Frankfurt/Main: Grupa Lotos embarked in a large Refinery upgrade program in 2007. The 10+ Programme is a strategic investment task performed by Grupa LOTOS S.A. within the development of the refinery in Gdansk. In terms of scale and value, it is one of the largest projects in CEE economies' until 2010). Following the successful start-up of a HDS unit, the refinery's Hydrogen needs increased significantly. Lurgi is delighted to have delivered, in less than 29 months the new H2 unit. The plant designed and built on an EPC (Engineering, Procurement, Construction) basis, went on stream in the last days of September, and bring an additional 7 T/H of H2 capacity to the site.

The generated hydrogen will be used in refining processes serving the production of top quality oils and gasoline (at the hydro-desulphurisation and hydrocracking plants). The plant is designed to work on three types of feed, LPG, light naphtha and natural gas (or a mixture of these raw materials).

The process of hydrogen production at the HGU plant is based on catalytic steam hydrocarbon reforming process which takes place in the Lurgi Steam Reformer, at temperatures of over 850°C, and the separation of hydrogen from the syngas produced by the PSA (Pressure Swing Adsorption) technology.

The project has been realised in accordance with the Standards of the Customer and Lurgi, taking into account the state-of-the art technology and materials (Best Engineering Practice). It should also be stressed that no accidents (0 lost time hours) have occurred owing to the use and observance of safety procedures on site over an almost 700,000-hour period.

"The project demonstrates the successful, longlasting cooperation between Lurgi and Grupa LOTOS S.A. going back to the early nineteen seventies. (*François Venet, CEO of Lurgi GmbH.*)

"With Lurgi, we found a partner who executed our project in quality and with success despite the short time frame" (*Zbigniew Paszkowicz, Refinery Expansion Programme Director of Grupa LOTOS S.A.*)

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Air Liquide is the world leader in gases for industry, health and the environment, and is present in over 75 countries with 43,000 employees. Oxygen, nitrogen, hydrogen and rare gases have been at the core of Air Liquide's activities since its creation in 1902. Using these molecules, Air Liquide continuously reinvents its business, anticipating the needs of current and future markets. The Group innovates to enable progress, to achieve dynamic growth and a consistent performance.

*Air Liquide combines many products and technologies to develop valuable applications and services not only for its customers but also for society. **Innovative technologies** that curb polluting emissions, lower industry's energy use, recover and reuse natural resources or develop the energies of tomorrow, such as hydrogen, biofuels or photovoltaic energy... Oxygen for hospitals, homecare, fighting nosocomial infections...*

***A partner for the long term**, Air Liquide relies on employee commitment, customer trust and shareholder support to pursue its vision of sustainable, competitive growth. The **diversity** of Air Liquide's teams, businesses, markets and geographic presence provides a solid and sustainable base for its development and strengthens its ability to push back its own limits, conquer new territories and build its future.*

***Air Liquide explores the best that air can offer to preserve life, staying true to its sustainable development approach.** In 2008, the Group's revenues amounted to **€13.1 billion**, of which almost 80% were earned outside France. Air Liquide is listed on the Paris Euronext stock exchange (compartment A) and is a member of the CAC 40 and Dow Jones Euro Stoxx 50 indexes.*

www.airliquide.com